Energy Efficiency of Machine Tools and Manufacturing Systems

By increasing the energy efficiency of machine tools and production systems it is possible to reduce production costs. This can be achieved by reducing energy consumption, increasing productivity or complex solutions. Cost return of the proposed and implemented measures is usually up to 3 years.

Monitoring and energy balance:
- Monitoring the consumption of machines and equipment according to international standards (ISO 14955, VDMA 34179 and others) or by own procedures
- Determination of energy balance and efficiency of the tested device
- Development of specific measuring devices and software solutions
- Analysis of electrical, pneumatic and hydraulic energy use and their interconnection

Machine tool and equipment innovation:
- Proposals for machine tool and component modifications for increasing the energy efficiency
- Testing of components and systems and recommendations for components optimized selection
- Calculations of cost saving potential and time returns of proposed solutions

Optimization of production technology:
- Technology optimization for increasing the productivity – cutting tools, cutting conditions, NC programs, feed drive tuning, etc.
- Optimizing the correct supply of cooling media
- Testing of cutting tools including the lifetime
- Virtual machining simulations
- Proposals of other manufacturing technologies (e.g. lasers)